Wisconsin Elementary School Asthma Survey
Summary Report
Fall 2003

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Introduction/Background

Childhood asthma has reached near epidemic proportions within the last two decades. In Wisconsin, over 100,000 children have been diagnosed with asthma (Family Health Survey, 2001). Asthma is the third leading cause of preventable hospitalizations, and nationally, asthma out ranks all other chronic diseases of children as the leading cause of school absenteeism (Lung Disease Data, May 2000, American Lung Association). Asthma is a chronic lung disease that can severely affect a child's ability to breathe. During an asthma episode or "attack," the lining of the airways becomes swollen and inflamed, the muscles around the airways tighten, narrowing the airways and the airways produce a thick mucus which obstructs the narrowed airways even further, making it very hard to breathe. Attacks can happen with or without warning and can quickly escalate to become life threatening. From 1990-2001, there were 1,152 deaths among Wisconsin residents where asthma was the underlying cause of death.

Since the American Lung Association of Wisconsin (ALA/W) adopted asthma as a priority in the 1970's, ALA/W has been working with a host of collaborative partners statewide–including the Wisconsin Department of Health and Family Services (DHFS), the Wisconsin Department of Public Instruction (DPI), Fight Asthma Milwaukee Allies and the Wisconsin Asthma Coalition, to increase asthma awareness and enhance asthma management for improved health outcomes. Schools have been a logical venue for educational efforts and policy initiatives. Programs to educate school staff and students alike have been successfully implemented in many districts. In 1999, a new state law went into effect, enabling children to carry their inhaled asthma medication with them at school, provided they obtain the written permission of their physician and parent/guardian.

Despite these efforts, there is concern that the awareness and educational efforts are not reaching into every district or school, that the inhaler law may not be adequately communicated or acted upon and that schools do not have policies and procedures in place to support students with asthma–placing students with asthma at risk during the school day, should a serious or life threatening asthma episode occur.

The Wisconsin Asthma Plan recommends conducting a survey to assess school compliance with the Wisconsin inhaler law. Some information regarding asthma management in the schools is collected by DPI via the School Health Education Profile (SHEP); however, this survey is only administered at the middle school and high school level. In an effort to better understand what is occurring related to asthma education and management at the elementary school level, the Wisconsin Department of Health and Family Services, Division of Public Health, partnered with the American Lung Association of Wisconsin to develop a survey to administer to elementary school administrators and school health nurses. The following is a report on the results of that survey which was made possible through funding from the Centers for Disease Control.

Methodology

Modeled after the SHEP, questions for the elementary school asthma survey were developed covering three main topic areas: educating students and staff on asthma, identifying and tracking students with asthma and implementing asthma policies/inhaler law. Demographic data was also collected. The survey was drafted, reviewed and edited by key stakeholders including project staff at the Lung Association, asthma staff with the DHFS, the school nurse consultant at DPI and several school nurses throughout the Wisconsin.

While the SHEP is administered to school principals and the lead health teacher at the school, stakeholders determined that school nurses would be an important community to survey to assess asthma management in schools. A decision was made to administer the elementary school asthma survey to school administrators and school nurses. Since school nurses often work in more than one school, two additional questions about nurse-staffing levels were added to the school nurse survey.

The survey was mailed to 2,566 contacts: 1,212 public and 724 private elementary school administrators and 630 school nurses. The DPI provided the contact information for mailing the survey. The mailing included the survey, a cover letter from the ALA/W and a stamped, self-addressed business reply envelope. In addition, school nurses received an asthma poster as an advanced thank you incentive for completing the survey. Administrators received an asthma brochure as an advanced thank you incentive. Three weeks after the survey was mailed, a postcard was sent to every school nurse and administrator. This not only reminded him or her to complete the survey, but it also thanked them for their help if they already returned the survey. It is important to note the timing of the survey. Due to grant cycle related time constraints, the survey was mailed in mid-May, right as the school year was coming to a close, and the reminder postcard was sent in early June. As this is a busy time of the year for schools, school administrators and school nurses may have not had time to respond to the survey; therefore, leading to a lower than expected response rate.

Survey data was entered into an Excel spreadsheet and tallied. Data was broken down by respondent group: public school administrators, private school administrators and school nurses. As private schools are generally quite different from public schools, data from these two respondent groups was analyzed separately. Percentages will not always total 100 either due to rounding or respondents opportunity to select more than one response to certain questions.

Results

Response Rate and Demographics

Of the 2,566 surveys mailed, 704 surveys were completed and returned reflecting an overall response rate of 27% with a breakdown by respondent group as follows.

	# Mailed	# Completed	Response Rate
Public School Administrators	1,212	263	22%
Private School Administrators	724	188	26%
School Nurses	630	253	41%

Although the survey response was limited, there is still more important information found in the results, which represent 704 schools in the state. A summary of key demographic characteristic of survey respondents is provided in Table 1.

Table 1: Demographic Characteristics of Survey Respondents

Table 1a: All Respondents

	Public Administrators	Private Administrators	School Nurses
Community Type			
Urban	31%	35%	22%
Suburban	22%	27%	20%
Rural	45%	39%	54%
Enrollment			
<100	3%	35%	1%
100-299	30%	53%	19%
300-499	42%	10%	29%
500+	23%	1%	47%
Grade Level Served			
K-5	49%	12%	23%
K-6	16%	12%	8%
K-8	15%	69%	15%
Other	18%	5%	50%

Table 1b: School Nurses Only

Schools Served	School Nurses
One	37%
2-3	37%
4-5	14%
6+	10%
Employment Status	
Part time	53%
Full time	45%
School Type	
Public	99%
Private	1%

Ashland County was the only county in the state not represented in the data collected. School administrators represented all counties except Ashland, Burnett, Crawford, Dunn, Sawyer and Washburn. School nurses represented every county except Ashland, Bayfield, Forest, Iron, Jackson, Langlade, Menominee and Pepin.

While not statistically tested, the characteristics of the sample compared to the state are similar in terms of school type, school size (enrollment) and grades served as shown in Table 2.

Table 2: Characteristics of Survey Sample Compared to All Wisconsin Schools

School Type*	Statewide	Survey Sample
Public Schools	63%	58%
Private Schools	37%	42%

Enrollment*	Public Elementary Schools Statewide	Survey Sample	Private Elementary Schools Statewide	Survey Sample
<100	8%	3%	42%	35%
100-299	36%	30%	48%	53%
300-499	43%	42%	8%	10%
500<	13%	23%	1%	1%

Enrollment*	Public Elementary Schools Statewide	Survey Sample	Private Elementary Schools Statewide	Survey Sample
K-5	54%	49%	9%	12%
K-6	19%	16%	8%	12%
K-8	9%	15%	73%	69%
Other	19%	18%	10%	13%

*Statewide data obtained from the Wisconsin Department of Public Instruction

Identification and Tracking of Students with Asthma

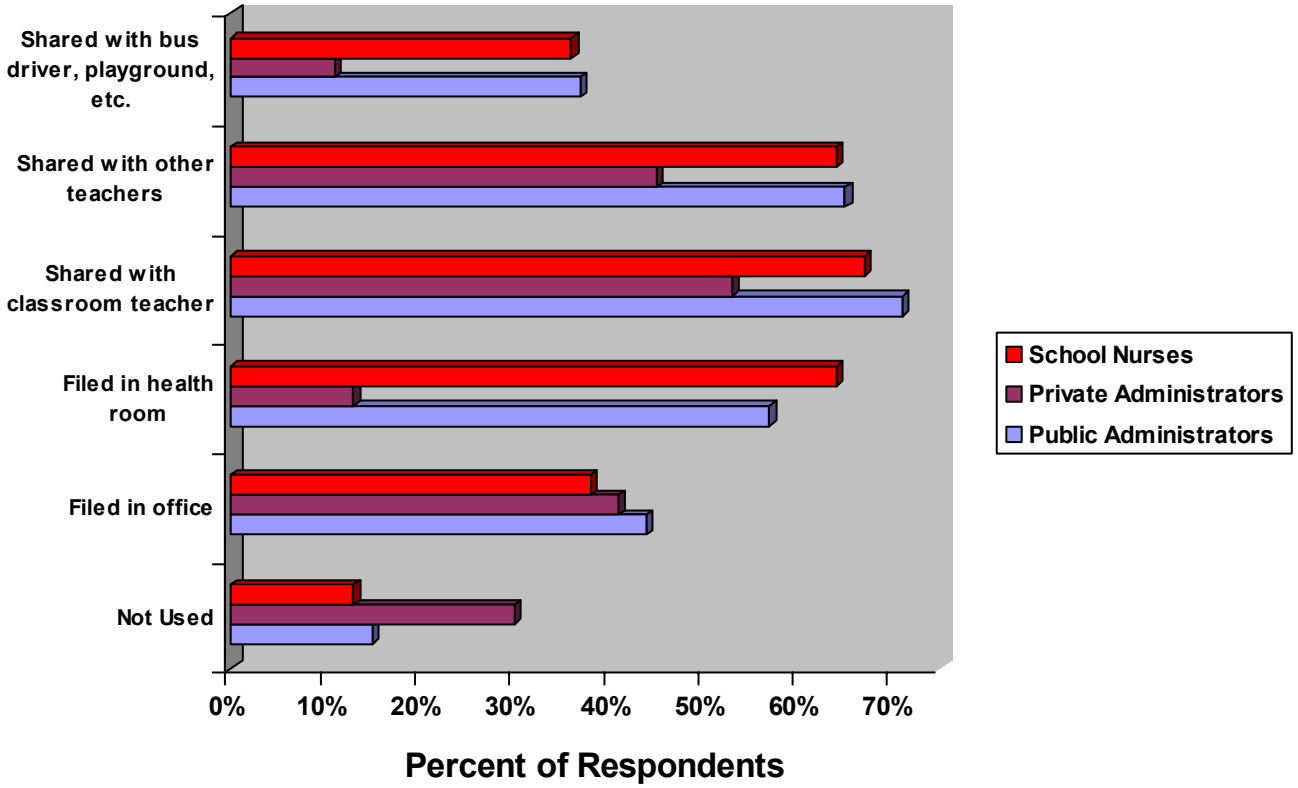
Schools employ a variety and combination of methods to identify students with asthma; predominantly through registration forms, medication forms, emergency contact forms and verbal information from parents/guardians. All of these methods rely heavily on parent/guardian cooperation in providing complete and accurate information. Nurses reported a greater reliance on obtaining information from the staff/teacher (52%), than did the public school administrators (38%) and the private school administrators (20%). Once a student with asthma is identified, over 90% of all respondents indicated that staff is alerted to the student's needs. Asthma action plans—a document that typically outlines the students symptoms, triggers, medication and steps to follow in case of an emergency—are reportedly used by 70% of the public school administrators, 52% of private school administrators and 65% of school nurses. Other proactive steps, such as direct follow-up and tracking of absences due to asthma, are less likely to be reported, especially among the private schools. Staff follow up (with the student or parent/guardian) was reported by 59% of public school administrators, 15% of private school administrators and 65% of school nurses. Public schools did not track asthma absences at a very high level as reported by the administrators and nurses (15% and 10%), nor did private school administrators (8%). Table 3 summarizes staff follow up of students with asthma and tracking of asthma-related absenteeism.

Table 3: Follow Up with Students and Asthma Absenteeism Tracking

Respondent	Staff Follow Up with Students When Asthma is Identified	Staff Track Absences Due to Asthma
Public Administrators	59%	15%
Private Administrators	15%	8%
School Nurses	65%	10%

One part of appropriate asthma management, as defined by the National Asthma Education and Prevention Program "Expert Panel Report Guidelines for the Diagnosis and Management of Asthma—Report Two" (1997) and the "Update on Selected Topics" (2002), is that each student with asthma have a personal asthma action plan, completed with parent, physician student and school input. According to public school administrators and nurses, asthma action plans are reported as "not used" in 13% of public schools, while nearly one-third of private school administrators reported not using asthma action plans. Across all groups, asthma action plans seemed to be shared with teachers and school nurses, but they are much less likely to be shared with other staff such as office staff, bus drivers, and lunchroom or playground supervisors. Figure 1 summarizes who has access to asthma action plans in the schools.

Figure 1: Distribution of Asthma Action Plans in Schools



Asthma Education for Staff and Students

Students with asthma, particularly in emergency situations, rely heavily on adult and peer assistance and support. Faculty, staff and student understanding of asthma—the signs and symptoms, as well as emergency treatment and prevention steps—is critical to successful asthma management in the school.

Sixty-seven percent (67%) of private school administrators reported that asthma education is not provided to staff. Among public school administrators and nurses, 29% and 24% reported asthma education is not provided to staff. While respondents indicated that some training is provided to a variety of school faculty and staff, training is less likely to include volunteers, lunchroom or play ground supervisors, bus drivers or crossing guards. When education or training is provided it most frequently takes the form of an in-service training program for public school respondents. It is not known if this education is provided on an ongoing, annual or one-time only basis. Reliance on brochures, posters, other materials or policy manuals is also a commonly reported form of staff training. Figures 2 and 3 summarize which staff receives training and what format is used for the training.

Figure 2: School Personnel Receiving Asthma Training

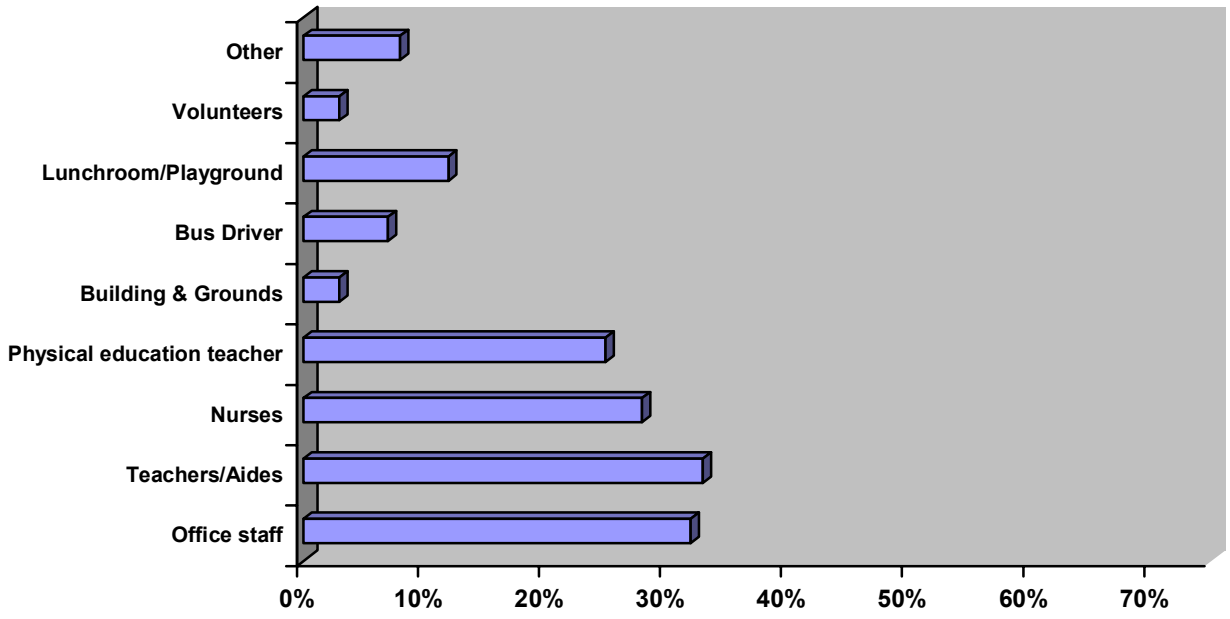
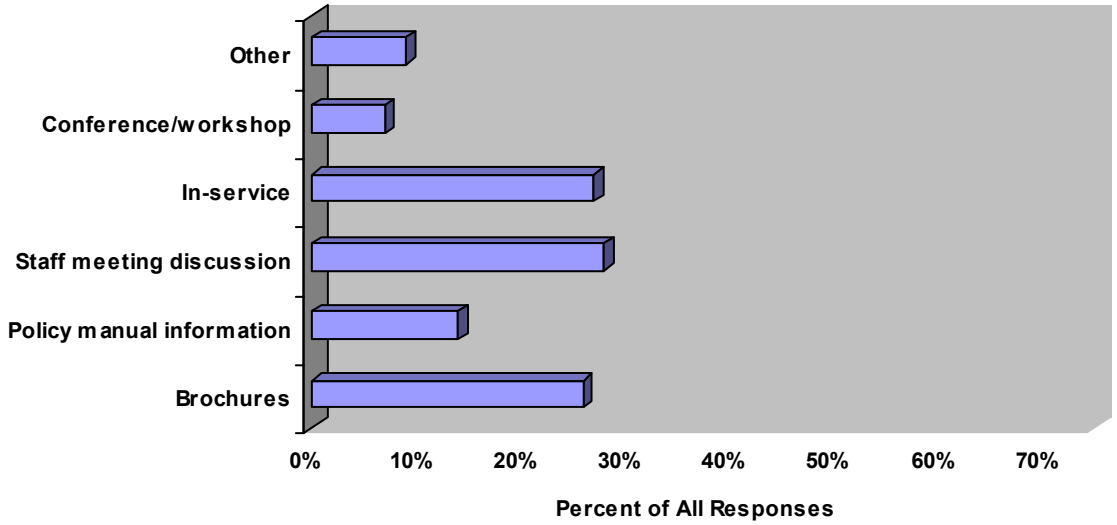


Figure 3: Asthma Training Method for School Personnel



Regarding student/peer awareness and understanding of asthma, very few survey respondents report that asthma, as a chronic disease, is taught as part of the curriculum. Seventeen percent (17%) of public school administrators and 12% of school nurses believed asthma information was part of the curriculum. This was similar to 23% among private schools. Teaching students how to emotionally support their peers with asthma is even less likely to occur as reported by only 7% of public school administrators and 6% of nurses, but more likely to happen in a private school (15%). It is important to note that over one-third of the public school administrators and school nurses responded "don't know" to the two questions about asthma education integration into the student curriculum. School nurses were least likely to be aware of curriculum content.

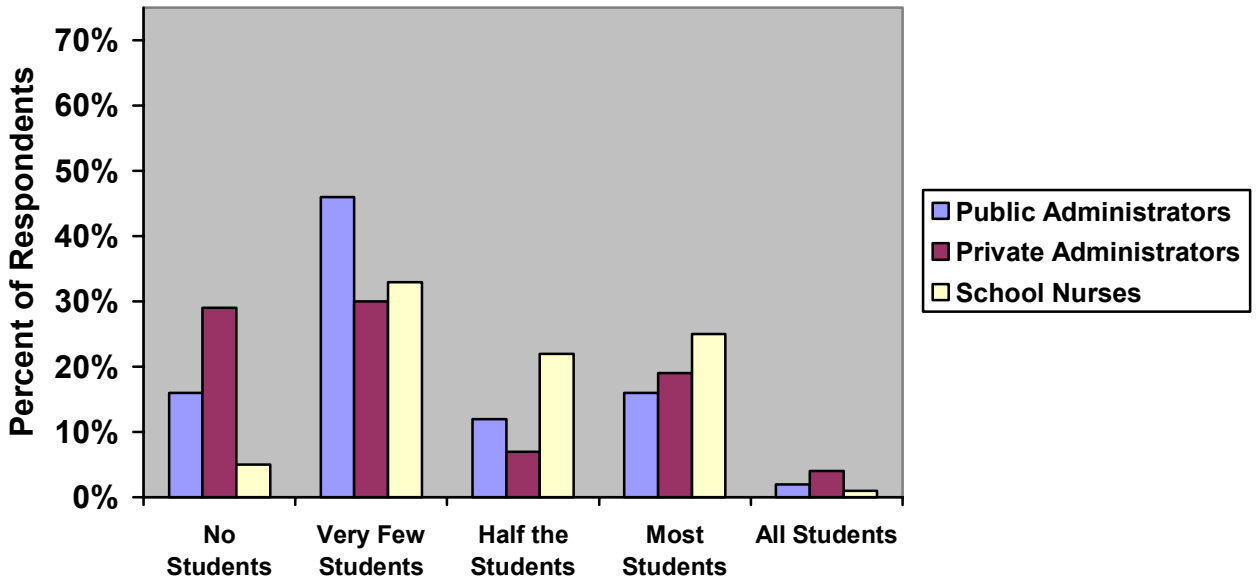
Once a student is identified as having asthma, very few respondents report offering any type of education to the student—only 16% of public school administrators and 3% of private school administrators report offering asthma education to the students with asthma. Nurses were more likely to report offering asthma education to students (21%).

Asthma Policies and Inhaler Law Implementation

The Wisconsin inhaler law states that a student with asthma may carry and self-administer his or her asthma medication—provided the school has written permission from both the student's parent or guardian and health-care provider. Seventy-six percent (76%) of survey respondents seemed very aware of the state inhaler law, particularly the school nurses (93%). Private school administrators were less certain about the law, with 34% indicating they were unfamiliar with the inhaler law. This is not surprising, as the Wisconsin statute does not apply to private schools.

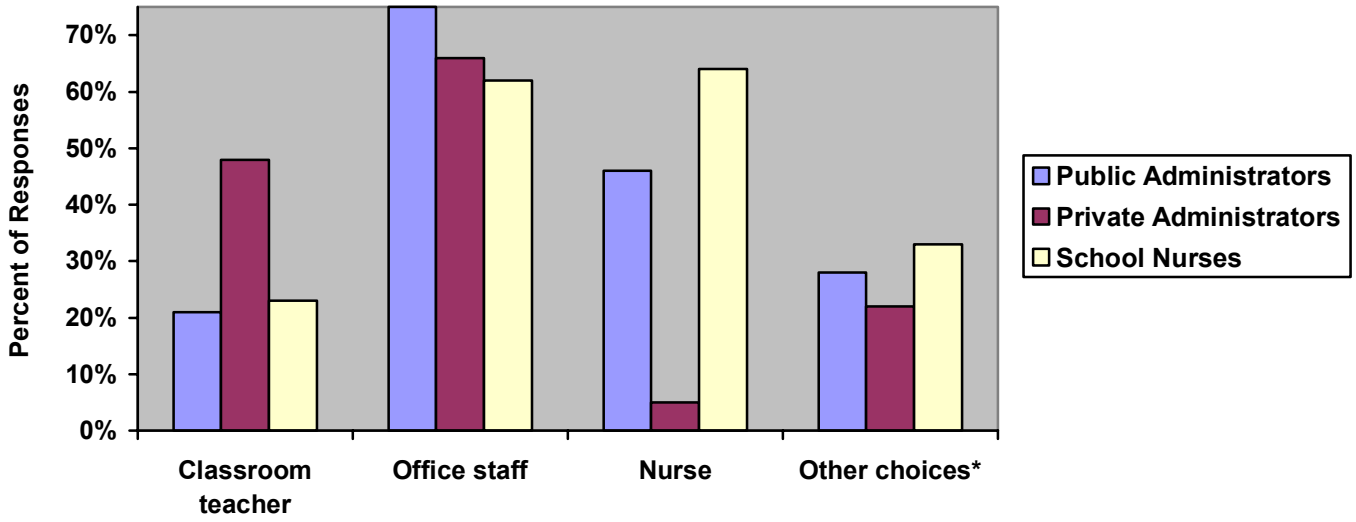
In terms of how the law is communicated to parents/guardians, the most common communication mechanisms were medication forms and special communication with parents or guardians in the form of letters or phone calls. Despite this communication, survey respondents report that very few of the students with asthma actually carry and self-administer their asthma medication. Sixty-four percent (64%) of public and 59% of private administrators indicated that "none" or "very few" students carry and self-administer their asthma medication. Nurses were more mixed in their responses with 39% responding "none" or "very few," 22% "half" and 26% "most." Figure 4 summarizes the estimated frequency that students with asthma carry and self-administer their asthma medication at school.

Figure 4: Proportion of Students with Asthma Who Carry and Self-administer Medication by Responding Group



When asthma medication is self-administered, nearly 60% of all the respondents reported that it is not tracked. "Office staff" is reported to be the adult most likely to assist students with their medication according to public administrators (75%), school nurses (62%) and private administrators (66%) (See figure 5). When all respondent groups are combined, it is important to note 58% report that office staff are most likely to assist with medication. Yet, only 32% of office staff receives asthma training. And, only 41% of all respondents report keeping asthma action plans on file in the office, where they would, presumably, be accessible to office staff. Eighty-four percent (84%) of school nurses reported that asthma management and medication policies are consistent among the schools within their scope of responsibility.

Figure 5: Adults that Assist Students with Asthma Medication at School by Respondent Group



*Other category includes nearest available adult, parents that comes to school and unspecified other

Additional Comments from Survey Respondents

Survey respondents were given the opportunity to share additional written feedback or comments, and 93 respondents (13%) did so. These comments included a very wide array of issues. Two independent reviewers analyzed and grouped these comments into several reoccurring themes related to: resources, parental involvement, staff knowledge and action. These themes are discussed below:

Resources: Clearly, the looming budget cuts and on-going restrictions are a reality as school personnel feel their resources of time, staff and money are extremely limited, preventing them from addressing this issue fully. As a result, student health (and asthma) falls lower on the priority list. Sixteen percent (16%) of the respondents commented wanting to do more to help their students, but they perceive resources as a barrier. Approximately, 10% of school nurses report their skills and training are underutilized in the area of asthma management.

Parental involvement: Some respondents reported miscommunication and misunderstanding between school personnel and parents regarding students with asthma. Among the school nurses, 22% report feelings of frustration with parents, students and health-care personnel alike on these issues. These school nurses perceive that parents do no understand asthma, do not understand how to properly administer and use medication and do not objectively assess their students maturity level before allowing them to carry and self-administer medications. The perception is that children are irresponsible and often lose or forget their medication.

***Staff knowledge and action*:** Among administrators, 21% indicated that school staff was very knowledgeable, well trained and doing what they feel is sufficient to address asthma. While some elaborated on steps they have taken to educate teachers and staff and described procedures they have in place, others indicated they were only in the beginning stages of developing plans and procedures related to school asthma management. When five respondents anecdotally reported the number of students with asthma in their school, all estimates fell below the expected asthma rates for elementary school-aged children.

The private school administrators were particularly appreciative of the awareness the survey created for them. Anecdotally, over 10 schools or districts contacted the Lung Association within two weeks of receiving the survey for information on available resources and reported that the survey prompted their call.

Discussion

The rising rates of childhood asthma and the nature of asthma as a serious and potentially life-threatening chronic disease, combined with the establishment of the state inhaler law make it necessary for schools to have clear procedures in place to consistently support and insure the health and safety of all students with asthma.

Paramount to effective asthma management in the schools is adequate faculty, staff and volunteer education and training. Asthma training occurs in many of the schools that responded to the survey. Yet on two separate questions, 35% and 38% of all respondents indicated that no asthma training was provided in their schools. The type of education or training provided could be an indicator of the depth or quality of training. Passive education, like a brochure or print information in the staff manual or a brief discussion in the context of a staff meeting, provides minimal information given the nature and complexity of asthma. In-service programs and workshops can be much more effective, yet only about one-third of schools that responded offered such trainings. This means that students with asthma under the supervision of adults in these settings may not have access to someone with an adequate level of asthma training. Volunteers, custodial staff, bus drivers and others such as playground or lunchroom assistants are rarely prepared to assist with any asthma knowledge of skills, based on training provided. This is putting children at risk.

The majority of schools responding to the survey indicated they have variety of ways to identify students with asthma. More specifically, they feel the ways of identification are adequate and that staff is alerted when a student is identified with asthma. Further proactive asthma intervention is less common. One such example is the use of asthma action plans. While schools report collecting asthma action plans, they are not always shared with appropriate staff beyond the classroom teacher or school nurse. All teachers, staff and any other adults who might supervise a student during the school day should have immediate access to the asthma action plan—especially for instruction to follow in the event of an asthma attack. Without knowledge of the specific steps to take for each student with asthma (what symptoms to look for, what medications are needed, when to administer them, who to call in an emergency and when to call 911), the student is at risk.

Schools could enhance asthma management, prevent asthma attacks and increase school attendance by:

- Following up with the students and parents to discuss issues and enhance understanding
- Tracking and monitoring absences related to asthma
- Tracking when medication is self-administered and provided
- Providing additional education to students with asthma

Some of this is already occurring in the public schools participating in this survey, but the private schools are much less proactive as perhaps explained by the absence of school nurses in this sector.

Peer support is another factor that can impact the degree to which the student's asthma is properly managed and treated in the school setting. Friends often alert adults to student's breathing difficulty in the height of an asthma attack. Age appropriate information on asthma as a chronic disease can be incorporated into science, health or physical education curricula, but this survey clearly indicates that this is not happening. Students are not taught how they can emotionally support their peers. Perhaps the hesitancy here is out of legitimate concerns about labeling students as well as a desire to adhere to privacy and confidentiality laws and policies.

Many resources already exist to assist schools in teaching about the respiratory system as well as asthma, but schools may be unaware of them and/or have no time in the day or in the curriculum to incorporate them.

It was surprising to find the degree of familiarity with the Wisconsin inhaler law and the degree to which respondents report communicating the law. In light of this, it raises a question as to why we found so few students were reported to self-carry and self-administer their asthma medication (Figure 3) as the law enables them to do. One explanation might be linked to an accepted view that it is predominantly upper elementary students (4^{th} and 5^{th} graders) who would have the maturity and skills needed for this responsibility. The goal is not necessarily to have 100% of the students with asthma self-carry or self-administer the medication. Additional comments provided by respondents indicate a feeling that students and sometimes parents are lacking the knowledge, skills and maturity to handle this responsibility. And, that physicians and parents are not providing this necessary training to them. The first line of responsibility for asthma education does rest within the health-care setting and from the perspective of the data and comments collected, there seems to be a gap in this area.

This information provided through this survey does indicate that schools are becoming more aware of asthma as a concern, and many have begun to address it through enhanced policies and procedures. Much more is still needed to provide comprehensive systems and actions to maximize positive outcomes for students with asthma. Current budget restrictions and staff cutbacks, and the limited availability of school nurses could inhibit any further expansion or growth in this area and may in fact lead to stagnation, putting students at risk.

While the low response rate to this survey limits the conclusions that can be drawn from this data, the demographic representation of respondents is quite varied, especially geographically. Unique questions were developed specifically for this survey and due to time constraints, were neither piloted nor validated. Fifteen surveys were excluded for improper responses, indicating room for improvement in question format or survey instructions. The American Lung Association of Wisconsin has long-term working relationships with many schools throughout the state. It is recognized that the administrators and nurses responding might be "customers" of the American Lung Association of Wisconsin asthma programs, and this could tend to skew the data in a more favorable direction. Despite these limitations, the data collected from this survey represents useful information that can be used to help elementary schools address the needs of their students with asthma.

Recommendations

The data provided by this survey suggest the following recommendations:

- Yearly asthma in-service trainings should be offered to school personnel and volunteers. The American Lung Association's no-cost programs and other local organizations should be considered.
- All schools should have an individual asthma action plan on file for each student with asthma. And, schools should obtain written permission to share these with any school personnel or other adults who interact with or supervise the student.
- All schools/districts should develop clearly stated and consistently practiced procedures for monitoring the treatment and management of asthma.
- Information on asthma as a chronic disease should be introduced and incorporated into existing health- or science-related curricula to enhance peer awareness and support of students with asthma.
- Asthma education should be enhanced within the health-care system so all students and their parents receive quality instruction on all aspects of asthma management—particularly understanding asthma and the proper use of medication—to ease the burden placed on school personnel.
- Stakeholder groups should work closely with schools and seek collaborative ways to advocate for greater levels of school nurse staffing to implement these recommendations.
- Intermittent surveys, such as this one, should be conducted to keep abreast of how elementary schools are dealing with asthma-related issues.

Resources

Available Programs and Consultation Services

- American Lung Association of Wisconsin: 262-703-4200
- Department of Public Instruction: www.dpi.state.wi.us
- Environmental Protection Agency: www.epa.gov
- National Association of School Nurses: www.nasn.org

Asthma Data, Statistics and Other Resources

- Department of Health and Family Services: Eden Schaefer, Asthma Program Coordinator
  608.267.6845 schafea@dhfs.state.wi.us
- American Lung Association: www.lungusa.org
- Environmental Protection Agency: www.epa.gov
- EPA Region 5: Jeanette Marrero Marrero.jeanette@epa.gov
  312.886.6543

Possible Local Resources

- Public Health Departments
- Hospitals/Clinics

To Take Action and Become Involved

- Wisconsin Asthma Coalition: Kristin Grimes, Asthma Project Manager
  414.390.2189 kgrimes@chw.org
- Fight Asthma Milwaukee Allies: Erin Lee, Coalition Coordinator 414.390.2179 elee@chw.org

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